

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 01-272108

(43)Date of publication of application : 31.10.1989

(51)Int.Cl.

H01L 21/203
H01L 21/20

(21)Application number : 63-100082

(71)Applicant : NIPPON TELEGR & TELEPH CORP <NTT>

(22)Date of filing : 25.04.1988

(72)Inventor : UNEDA MAKOTO
WATANABE YOSHIO
FUKUDA YUKIO
OMACHI TOKURO

(54) GROWTH OF COMPOUND SEMICONDUCTOR

(57)Abstract:

PURPOSE: To grow a high-quality compound semiconductor whose piercing dislocation has been reduced by a method wherein a temperature of an Si substrate is set to a temperature at which a group V element for buffer layers can be diffused into an atomic layer composed of a group III element for buffer layers the atomic layer is formed by supplying the group III element and, after that, a buffer layer is formed by supplying the group V element.

CONSTITUTION: An Si substrate is cleaned in a vacuum at 900° C; it is kept at 300° C; an As raw material is supplied to the surface of the Si substrate; an As stabilized face constituted of one atomic layer of As is formed. Then, a Ga raw material for five molecular layers is supplied as GaAs; a Ga layer is formed on the As stabilized face of Si. Then, when the As raw material is supplied, an As atom is diffused to the Ga layer; a buffer layer for five molecule layers of GaAs is formed. While a temperature of the substrate is kept at 300° C, the Ga raw material and the As raw material are supplied simultaneously; GaAs with a film thickness of 13nm is formed; then, the temperature of the substrate is raised to 500° C; a GaAs layer with a film thickness of 2 μ m is grown.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]